## (19) World Intellectual Property Organization

International Bureau





(43) International Publication Date 13 January 2005 (13.01.2005)

PCT

(10) International Publication Number WO 2005/003667 A1

(51) International Patent Classification<sup>7</sup>: H05B 3/66

F27D 11/02,

(21) International Application Number:

PCT/SE2004/001047

(22) International Filing Date: 29 June 2004 (29.06.2004)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data: 0301970-0

3 July 2003 (03.07.2003) SI

(71) Applicant (for all designated States except US): SAND-VIK AB [SE/SE]; S-811 81 Sandviken (SE).

(72) Inventor; and

(75) Inventor/Applicant (for US only): LEWIN, Thomas [SE/SE]; Bergslagsvägen 227 B, S-734 40 Hallstahammar (SE).

(74) Agents: ÖRTENBLAD, Bertil et al.; Noréns Patentbyrå AB, Box 10198, S-100 55 Stockholm (SE).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

## Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: A METHOD AND AN ARRANGEMENT FOR SUPPORTING VERTICALLY DEPENDING ELECTRICAL RESISTANCE ELEMENTS.

(57) Abstract: The present invention relates to a method of supporting vertically hanging electrical resistance elements for heating furnaces or ovens in industrial operation, wherein each element comprises current conducting legs (6) that run downwards and upwards a number of times, wherein the resistance element (1) includes along its length a number of ceramic discs (8) that are provided with through-penetrating holes through which respective element legs extend, wherein the upper part of said element merges with terminals (5a, 5b) that are connected to a source of electric current, and wherein said element is supported by at least one of the uppermost ceramic discs. The invention is characterised in that the uppermost ceramic disc or the uppermost ceramic discs (10, 11) supporting said element is/are placed in the insulation (3) of the furnace roof (2) above the underside (15) of said roof; and in that legs (6) of the element are caused to be short circuited at a location slightly or somewhat beneath the underside (15) of said furnace roof with the aid of short circuiting plates (7).

